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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NATALINI, JEFF WILLIAM	

ART UNIT	PAPER NUMBER
2858	

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,843	FRAEDRICH, VOLKER	
	Examiner	Art Unit	
	Jeff Natalini	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *15-29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7-14 and 30* is/are rejected.

7)☒ Claim(s) *4-6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/23/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 15-29 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/21/06.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 30 is rejected under 35 U.S.C. 102(b) as being anticipated by Topp et al. (5574376).

Topp et al. discloses an apparatus, comprising:

means for detecting two orthogonal components of a magnetic field from a cable (col 4 line 51-64, states is done in a conductor and a cable is a conductor);

means for obtaining test values at test points along the cable (col 1 line 60-64);

means for determining a degree of inhomogeneity in the magnetic field along the cable from the test values (fig 3, shows the display showing the degree of inhomogeneity, wherein the most faulty position and at other points where there is not fault; see also col 4 line 65-66 where the means is a processor); and

means for displaying the degree of inhomogeneity in the magnetic field (col 4 line 66-67, display shown in fig 3, and the means shown in fig 1-3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3, 7, and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) in view of Topp et al. (5574376).

In regard to claims 1, 3, and 7, Lulham discloses a method of locating cable faults (abstract) comprising:

coupling an audio frequency generator to a cable to provide a magnetic field at an audio frequency (abstract lines 5-17);

generating test values corresponding to the magnetic field along the cable route (col 7 line 46-57);

entering the test values at a plurality of test points on the cable route (col 7 line 46-53);

determining a degree of inhomogeneity along the cable route from the test values determined (col 1 line 60 - col 2 line 6) and displaying the degree of inhomogeneity (col 2 line 41-64 and col 3 line 33-62; also see figures 12-17 and descriptions).

Lulham lacks specifically wherein the test values are generated corresponding to receiving at least two orthogonal components of the magnetic field at the receiver and storing all values recording in memory (claim 1),

wherein the detecting of the magnetic field is done with a first and second antenna coil, being positioned orthogonal to each other (claim 3) and

wherein entering the test values at test points along the cable includes entering an input to a softkey at various points on the cable route to signify a test point, and storing the test values in memory upon activation of the softkey.

Topp et al. discloses wherein the two orthogonal values are received in order to properly produce values in order to test a conductor are determined with antenna coils orthogonal to each other (col 1 line 55-64, see also col 4 line 52-64), and recording all the values in memory (col 3 line 62-64) and wherein entering the test values at test points along the cable includes entering an input to a softkey at various points on the cable route to signify a test point, and storing the test values in memory upon activation of the softkey (col 3 line 53-61).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham to incorporate determining two orthogonal values of the magnetic field with antenna coils orthogonal to each other and storing the readings, when the test values are input at various points along the cable and activating the memory upon activating the softkey, as taught by Topp et al. in order to be able to inspect faults through many non-conducting coating of the conductor (col 1 line 21-24).

In regard to claims 9 and 13, Lulham discloses displaying the degree of inhomogeneity with a line trace indicated on a display of the receiver (col 2 line 41-64 and figures 12-18).

In regard to claims 10-12, Lulham as modified lacks specifically wherein the line trace of the degree of inhomogeneity discloses different coloration (claim 10), thickness (claim 11), and different patterns (claim 12).

MPEP 2144.04 IV A and B *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) states that changes in size/shape do not have patentable distinction. MPEP 2144.06, states substituting equivalents known for the same purpose (different colors) does not provide patentable distinction.

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham as modified to include in the display of inhomogeneity different discoloration, thickness, and/or patterns (shape) to provide the user with quick knowledge of where the inhomogeneity is greatest in the cable.

In regard to claim 14, Lulham discloses overlaying a geo-information cable route (unfaulted cable) display to compare with the cable route (col 4 line 20-34).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) and Topp et al. (5574376) as applied to claim 1 above, and further in view of Davis, Jr. (5539323).

Lulham as modified by Topp et al. lack specifically wherein a first pole of the audio frequency generator is connected to a central conductor of the cable, where the

central connector is connected to an earth ground, and where a second pole of the generator is connected to an earth ground.

Davis, Jr. teaches wherein a cable has a central connector connected to an earth ground (col 2 line 62-65).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to have the audio frequency generator connected to one or two poles to earth ground in order to be able to properly generate signals (generated signals all have a value based on a differential from ground), and its obvious from the teaching of Davis, Jr. to include an earth ground connected to an inner connector of a cable to provide proper shielding (col 2 line 50-65).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lulham (5714885) and Topp et al. (5574376) as applied to claim 1 above, and further in view of Bose et al. (US Pub 20030010494).

Lulham as modified by Topp et al. discloses all that is disclosed above.

Lulham as modified lacks wherein a variation of the components of the orthogonal values are determined, and the variation is scaled to form the degree of inhomogeneity.

Bose et al. discloses wherein a variation of the components of the orthogonal values are determined, and the variation is scaled to form the degree of inhomogeneity (paragraph 9, see figures 9-14).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Lulham as modified to determine the inhomogeneity of the values determined by determining a variation, and forming the degree of inhomogeneity from the variation as taught by Bose et al. in order to obtain a more complete characterization of the values (paragraph 8).

Allowable Subject Matter

8. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regard to claim 4, the prior art does not teach or render obvious wherein generating test values corresponding to the orthogonal components of the magnetic field along the cable includes filtering the amplified signals and digitizing the filtered signals to produce the test values and the combination as claimed.

Claims 5-6, depend from claim 4 and would also be allowable.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McBride (4408155) discloses sensors set up orthogonal to each other to detect magnetic field in a conductor. Smith (7075309) discloses a system for locating an anomaly of a conductor, where test points are entered at different locations of the conductor to locate an anomaly.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Natalini whose telephone number is 571-272-2266. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeff Natalini

ANJAN DEB
PRIMARY EXAMINER